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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,654	08/07/2001	Richard D. Goold	PC-0049 CIP	7397

27904 7590 03/17/2003

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EXAMINER	
NICKOL, GARY B	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 03/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/924,654	GOOLD ET AL.	
	Examiner	Art Unit	
	Gary B. Nickol Ph.D.	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for R ply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 26 December 2002 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) 5-15 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The Election filed December 26, 2002 (Paper No. 7) in response to the Office Action of December 4, 2002 is acknowledged and has been entered.

Claims 1-15 are pending in the application.

Claims 5-15 have been withdrawn from further consideration by the examiner under 37 CFR 1.142(b) as being drawn to non-elected inventions.

Claims 1-4 are currently under prosecution

Applicant's election with traverse of Group I, claims 1-4 in Paper No 7 is acknowledged. The traversal is on the ground(s) that the claims of Group I could be examined together with their methods of use (Group II), as well as with claims drawn to antibodies specific for the polypeptides of Group I (Group III), as well as their methods of use (Group V). This is not found persuasive. MPEP 802.01 provides that restriction is proper between inventions which are independent or distinct. Here, the inventions of the various groups are distinct for the reasons set forth in Paper No. 6. As to the question of burden of search, the inventions are classified differently, necessitating different searches in the literature. Further, classification of subject matter is merely one indication of the burdensome nature of the search involved. The literature search, particularly relevant in this art, is not coextensive and is much more important in evaluating the burden of search. Different searches and issues are involved in the examination of each group. For these reasons the restriction requirement is deemed to be proper and is therefore made FINAL.

Specification

The specification is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (i.e. see page 31, line 21). Applicant is required to delete all embedded hyperlinks and/or other form of browser-executable codes. See MPEP § 608.01

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a well established or credible utility.

The claims are drawn to a purified protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:4 or an amino acid sequence having at least 95% sequence similarity to SEQ ID NO:4, an antigenic epitope comprising residues 550-565 of SEQ ID NO:4, a biologically active portion of claim 1 consisting of residues 404-417 of SEQ ID NO:4, and a composition comprising the protein of claim 1 and a labeling moiety or a pharmaceutical carrier.

The claims appear to lack a well-established utility because of the following:

There appears to be conflicting examples regarding the amino acid of SEQ ID NO:4 encoded by the cDNA of SEQ ID NO:3. The specification clearly teaches that the amino acid of SEQ ID NO:4 is a "tumor suppressor" protein (page 7, line 28). The conventional wisdom in the art regarding tumor suppressor genes is that loss of their expression or low amounts of expression (as compared to normal tissue) lead to uncontrolled proliferation (i.e. p53, rb). Indeed, the specification teaches the results of microarray analysis comparing the differential expression of SEQ ID NO:4 in normal ovary tissue relative to ovary tumorous tissue. According to the specification, these results revealed a significant differential expression of SEQ ID NO:4 in ovary tumor and in treated ductal carcinoma cells and prostate cancer cells (page 12). Indeed, it appears that Applicants have shown that SEQ ID NO:4 is a tumor suppressor because the ratio of cancerous tissue to normal tissue expression provides negative values (i.e. –1.16, -1.24). It is the interpretation of this Examiner that the negative values correspond to lower or less expression in the cancerous tissues versus their normal counterparts.

The cDNA which encodes the tumor suppressor above, is SEQ ID NO:3. Pages 35-37 of the disclosure present data analyzed with SEQ ID NO:3 in normal versus tumor tissues selected from prostate, breast, ovary, and pancreas. This data was analyzed using transcript imaging which allows assessment of the relative abundance of the expressed polynucleotides in all of the cDNA libraries (page 35, line 11). However, contrary to the microarray analysis data presented above, the relative abundance for the cDNA encoding SEQ ID NO:4 in all tumor tissues tested was a positive value compared to no expression in cytologically normal tissues. Thus, it appears that cDNA encoding SEQ ID NO:4 has conflicting expression patterns and would lead one of ordinary skill in the art to question the credibility of the asserted utility regarding SEQ ID NO:4,

as indeed a tumor suppressor. Thus, based on the information in the specification, the claimed polypeptide of SEQ ID NO:4 appears to lack a well-established and credible utility.

If applicant were able to overcome the rejection under 35 USC 101 above, the following claims would still be rejected:

Claims 1 and 4 are further rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The written description in this case only sets forth SEQ ID NO:1 and therefore the written description is not commensurate in scope with the claims drawn to naturally occurring amino acid sequences having at least 95% sequence identity to the sequence of SEQ ID NO: 4, which reads on variants of SEQ ID NO:4.

Vas-Cath Inc. V. Mahurkar, 19 USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (*See Vas-Cath* at page 1116).

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 USC 112 is severable from its enablement provision (see page 115).

Reiger et al (Glossary of Genetics and Cytogenetics, Classical and Molecular, 4th Ed., Springer-Verlay, Berlin, 1976) clearly define alleles as one of two or more alternative forms of a

gene occupying the same locus on a particular chromosome..... and differing from other alleles of that locus at one or more mutational sites (page 17). Thus, the structure of naturally occurring allelic sequences are not defined, nor in this case, is the structure of variant proteins. With the exception of SEQ ID NO:4, the skilled artisan cannot envision the detailed structure of the encompassed amino acid sequences comprising 95% sequence identity to SEQ ID NO:4 and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. The amino acid sequence itself is required. See *Fiers v. Revel*, 25 USPQ 2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. V. Chugai Pharmaceutical Co. Lts.*, 18 USPQ2d 1016. Although these court findings are drawn to DNA art, the findings are clearly applicable to the claimed naturally occurring amino acid sequences.

Furthermore, although drawn specifically to the DNA art, the findings of *The Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412) are clearly applicable to the instant rejection. The court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that while Applicants are not required to disclose every species encompassed by a genus, the description of a genus is achieved by the recitation of a representative number of DNA molecules, usually defined by a nucleotide sequence, falling within the scope of the claimed genus. At section B(1), the court states that "An adequate written description of a DNA...'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention".

Therefore only an isolated polypeptide comprising the amino acids of SEQ ID NO:4, but not the full breadth of the claims meets the written description provision of 35 USC 112, first paragraph.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary B. Nickol Ph.D. whose telephone number is 703-305-7143. The examiner can normally be reached on M-F, 8:30-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Gary B. Nickol, Ph.D.
Examiner
Art Unit 1642

GBN
March 14, 2003